Carbon Abatement Technologies – A new Strategy

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Unit

Fossil Fuel Power Generation and Climate Change 1

- Climate Change Global Warming
- Carbon Dioxide emissions reduction vital to avoid consequences
- It is a global problem needing global solutions
- Energy White Paper aim of 60% CO2 reduction by 2050
- Aim to reduce CO2 emissions by over 20% by 2020
- But need reliable energy sources as well

Fossil Fuel Power Generation and Climate Change 2

- UK
 - Dependence on fossil fuels for power will dominate for decades
 - By 2020 70% to 75% of UK power will be fossil fuel sourced
 - Generating capacity is expected to increase 10% by 2020
 - UK only accounts for 2% of world emissions
- Developing countries expanding coal-fired fleet rapidly
- China, India and Russia has expanding economies
- Coal and Gas will still be the main source of energy well into the future
- CO2 emissions look set to grow significantly if we do nothing

Making Fossil Fuels Sustainable 1

- Two prong approach:
 - Reduce CO2 emissions from existing technologies Now
 - More radically sequester the carbon Longer term
- Existing technologies:
 - Make existing plants more efficient
 - More efficient boilers for coal
 - Efficient turbines
 - Best practice
 - Mixing fuels with carbon neutral bio-mass

Making Fossil Fuels Sustainable 2

- Carbon Sequestration (or Carbon Capture and Storage):
 - CO2 Capture
 - CO2 Transport & Storage.

Each raises quite different issues

- Capture
 - Costs and impacts on efficiency
 - The need to prove the technology
 - IGCC technology with CCS and Hydrogen production
- Storage
 - The need to prove it is reliable and safe
 - OSPAR/London Conventions
 - Public perception and Environmental Concerns

A Carbon Abatement Technology Strategy

- A new strategy is needed to address these issues
- Based on Energy White Paper Targets and Policies
- Longer-term taking us up to 2020
- Will complement the programmes supporting renewable technologies.
- Will take account of Security of Supply issues.
- Will focus on CO2 emissions from power generation.
- Carbon Sequestration will be a key element of the Programme
- But what about other industrial emitters? E.g. Iron and Steel
- What shape should be the merging CAT Programme?
- Do we work with other countries and whom?

A Carbon Abatement Technology Strategy

- Consultation closed last month
- Plan to publish early in 2005
- A new programme of work planned to start in April 2005